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Study to determine best predictors of academic success for selected first semester freshmen at Longwood College. Predictors considered were: High school grade-point average, total scores on high school and college editions of American Council on Education Psychological Examinations, and principal's opinion as to adequacy of student's preparation. Results indicate that principal's opinion and high school grade-point averages were the only significant predictors in this study. Also reviews literature on effectiveness of admission criteria.

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PREDICTIVE VALUE OF CERTAIN CRITERIA FOR ACADEMIC SUCCESS BY SELECTED FRESHMEN AT LONGWOOD COLLEGE

LONGWOOD COLLEGE
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THE PROBLEM AND DEFINITION OF TERMS USED

High school guidance counselors and college admissions officers use certain criteria to determine which students should go to college and who will succeed in a particular institution. The criteria used differs with each individual counselor and with each institution.

I. THE PROBLEM

Statement of the problem. The purpose of this study was to determine what criteria were the best predictors of academic success at Longwood College for selected first semester freshmen.

For the purposes of this study, academic success at Longwood College was measured by the grade point average earned during the first semester at the College by selected freshmen. The grade point average was determined by assigning a number 3 to each A earned, a 2 to each B earned, and a 1 to each C earned. If the student earned a D or less, no number was assigned. The number assigned for the grade was then multiplied by the number of semester hours credit the course carried. The sum of these products was then divided by the number of semester hours of credit passed. The resulting number was the college grade point average.

Criteria for selection of prospective students included the following.

(1) Total grade point average for four years of high school class work. The total grade point average was determined by assigning a number 3 for an A or numerical equivalent for a years subject mark. The number 2 was assigned to all marks of B or equivalent, and the number 1 to all marks of C or equivalent. If the student received a mark of D or lower, no number was

was assigned. The total of the numbers assigned for the marks for four high school years was then divided by the total number of high school units earned by the student. The resulting figure was the high school grade point average.

If numerical marks were assigned by the high school, they were converted in the following manner: 100.00 to 93.75 equaled an A, 93.74 to 87.50 equaled a B, 87.49 to 80.25 equaled a C, and 80.24 to 75.00 equaled a D. In all cases where the high school assigned numerical marks, the Minimum stated passing mark was 75.00.

(2) Total score on the 1953 High School Edition of the American Council on Education Psychological Examination. The total score was the sum of the Quantative score plus the sum of the Language score. The total score will hereafter be referred to as the T-score of the '53 High School A. C. E. The Quantative and Language scores will hereafter be referred to as the Q-score and the L-score respectively.

(A) Q-score of the '53 High School A. C. E.

(B) L-score of the '53 High School A. C. E.

(3) Total score on the 1947 College Edition of the American Council on Education Psychological Examination. The total score is sum of the Quantative score plus the sum of the Language score. The total score of this test will be hereafter referred to as the T-score of the '47 College A. C. E.

The Quantative and Language scores will also be referred to as the Q-score and the L-score respectively.

(A) Q-score of the '47 College A. C. E.

(B) L-score of the '47 College A. C. E.

(4) Principal's opinion as to the adequacy of preparation of the student.

CHAPTER II

REVIEW OF THE LITERATURE

Much has been written concerning the philosophy and criteria for determining admission to colleges, but little has been written for publication concerning the effectiveness of admission criteria.

I. LITERATURE ON EFFECTIVENESS OF HIGH SCHOOL MARKS AS AN ADMISSION CRITERIA

In summarizing studies that determined the correlation between college scholarship and high school marks, Leonard found the average correlation to be .55[1]. Benjamin Fine[2] in his excellent study quoted an admission official at Salem College as saying that there is a "lack of reliability that can be placed on high school grades." Fine further

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1 J. Paul Leonard, "Can We Trace the Evidence on College Admission Requirements?" The School Review, LIII (June 1945), 328.

2 Benjamin Fine, Admission to American Colleges, Harper and Brothers, New York, 1946, 225.

found that sixty percent of all colleges considered the high school record either essential or desirable. He further found that thirty percent of the colleges in the United States were not interested in the prospective students high school record.

II. LITERATURE ON EFFECTIVENESS OF TEST SCORES AS AN ADMISSION CRITERIA

In using results of tests for admission criteria, much controversy exists. The pattern in American colleges runs from total reliance on a battery of tests to determine a candidates potential, to a complete lack of usage.

Leonard[3] shows that the average correlation shown by a large number of studies between college scholarship and general achievement tests to be .55, and between college scholarship and mental tests to be .44. Fine[4] reported a comment from Radcliffe College concerning testing and admissions as follows, "A verbal aptitude of A does not invariably indicate a brilliant student, but a verbal aptitude of D or lower is a pretty clear indication that the student will have trouble with college material."

Fine stated that fifty-seven percent of the colleges in the United States use psychological tests for admission purposes, forty-one percent use placement tests, thirty-eight percent use general aptitude tests, seventeen percent use guidance tests, eight percent use English tests, four percent use achievement tests, eight percent use reading tests, and four percent use mathematics tests.

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[3]Leonard, loc. cit.

[4]Fine, loc. cit.

On page ten of the Manual of Directions for the A. C. E. Psychological Examinations was found the following:

> Frequently the score or percentile rank on the A.C.E. is used as a measure of student 'capacity' or 'potential'.....In the case of individual students, it is wise to be extremely careful in making this kind of evaluation, since many personal elements must be considered. These include such factors as motivation, health, physical characteristics, social adjustment, family, home envirenment, etc.

A danger cited by Fine[5] in quoting a statement from a Connecticut College is that admission work may rely too much on test records and may become mechanical and fail to use other significant facts in the students history.

III. LITERATURE ON EFFECTIVENESS OF THE PRINCIPAL'S OPINION AS AN ADMISSION CRITERIA

In reviewing the literature one finds no reference made to the principal's opinion as to the value of his expression in determining who can succeed in college. Reference is made in scattered citations to the effect that he can give an accurate personality profile. Several pleas were seen for more articulation between the principal and the college admission officer.

The literature seems to stress the fact that no single criteria can be used for determining academic success in prospective students. Colleges generally use several factors. Some will place much weight on test scores and little on high school work, extra curricular activities, personality traits, etc. Others will place much weight on extra curricular

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[5]Fine, loc. cit.

activities, personality traits, etc. and a disproportionately small amount on other factors.

CHAPTER III

METHOD OF THE STUDY

High school transcripts of all of the three-hundred plus September, 1957 freshmen students at Longwood College were searched to obtain those who had taken both the '47 College A. C. E. and '53 High School A. C. E. tests. These were then sorted by students who graduated from high school in the Spring of 1957 from those who graduated from high school earlier.

Of those who graduated from high school in the Spring of 1957, transcripts were removed of those who had withdrawn from College prior to the time of the study. Twenty-nine students remained who had taken the '47 College A. C. E. and the '53 High School A.C.E., who had graduated from high school in the Spring of 1957, who enrolled in Longwood College September, 1957, and who were still enrolled. It should be emphasised at this time that the twenty-nine students studied, do not constitute a representative or random sample of the 1957-58 Freshman Class at Longwood College.

At this point the students' college grade point average was obtained from the Registrar's Office. These grades were for the 1957 Fall semester's work at Longwood College. From the students high school transcripts, their test scores were recorded, high school grade point average figured, and the principal's opinion obtained. This information

was summarized in Table I. A code number was used to identify the students for the study and to keep their test scores anonymous.

On the back side of the high school transcript appears the following statement and scale, "Preparation-Check the statement expressing your opinion of this applicant with respect to preparation for college

( ) superior ( ) good ( ) average ( ) doubtful ( ) inadequate"

For tabulation purposes these words were given a numerical weight; five for superior, four for good, three for average, two for doubtful, and one for inadequate. Coefficients of correlation were then run in the usual manner.

Mean scores were figured as well as coefficients of correlation between the college grade point average and the high school grade point average, '53 High School A. C. E. T-score, Q-score, and L-score, '47 College A. C. E. T-score, Q-score, and L-score as well as the Principal's opinion. The Pearson Rho formula was used for the determination of all coefficients of correlations obtained.

CHAPTER IV

TREATMENT OF THE DATA

Table II shows the determination of the coefficient of correlation between the college grade point average and the high school grade point average. This coefficient was .67. A mathematical interpretation of the degree of relationship implied can be obtained by applying Kelley's coefficient of alienation. This is expressed in the formula $k=1-(r)^2$. Substituting .67 for r in the formula, one finds that $k = .74$ or 74%.

This means that there is a departure of perfect agreement 74% of the time. Stated another way, it means that there is a 26% prediction better than chance.

As r is positive in this case, there is a positive correlation between the two criteria.

Table III shows the coefficient of correlation between the college grade point average and the '53 High School A. C. E. T-score to be .38. By applying Kelley's formula of coefficient of alienation ($k = 1-(r)^2$) one finds that there is only a 9% better prediction than chance.

Table IV shows the coefficient of correlation of .108 between the '53 High School A. C. E. Q-score and the college grade point average. Kelley's formula yields a 1% better predictive ability than chance.

Table V shows the correlation of .401 between the college grade point average and the '53 High School A. C. E. L-score. Kelley's formula yields an 8% better than chance result.

Table VI shows the coefficient of correlation between the college grade point average and the '47 College A. C. E. T-score to be .434. Kelley's formula yields an 8% result better than a chance selection.

Table VII shows a correlation of .21 between the college grade point average and the '47 College A. C. E. Q-score. By applying Kelley's formula one finds a 3% better than chance perdiction.

Table VIII shows a coefficient of correlation of .494 between the college grade point average and the '47 College A. C. E. L-score. By using the L-score as a perdictor, one can average 13% better than chance according to Kelley's formula

Table IX shows the coefficient of correlation between the college grade point average and the principal's opinion to be .688. A 27% better than chance perdiction can be made when this correlation is applied to the formula by Kelley.

CHAPTER V

SUMMARY AND CONCLUSIONS

I. SUMMARY

In summarizing, on the bases of the twenty-nine cases studied, it would appear that the predictors that are best appear in descending order. They are: Principal's opinion, high school grade point average, '47 College A. C. E. L-score, '47 College A. C. E. T-score, '53 High School A. C. E. L-score, '53 High School A. C. E. T-score, '47 College A. C. E. Q-score, and the '53 High School A. C. E. Q-score.

It is interesting to note that both L-scores correlate higher with the college grade point average than either the T-scores or the Q-scores.

On the bases of this study, the '47 College A. C. E. test is superior to the '53 High School A. C. E. test as a predictor of college success, but not significantly so.

II. CONCLUSIONS

A generally accepted significant coefficient of correlation should be .6 or higher. Therefore on the bases of this study, one might assume that the principal's opinion and the high school grade point averages are the only two criteria that have significance.

There is a definite need for further research on other criteria for admitting students to college particularily with the expected increase in numbers that are now and will be applying for admission to the institutions of higher education.

There is a feeling among the admission personnel across the country that many facets of a student should be taken into consideration before he is admitted to a college. Therefore it would appear that more factors with high correlation with success in college be isolated and used in making decisions reflecting four years of an individuals life.

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